Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An electrically controlled fluidic valve separating two volume spaces, ~~characterized in that it comprises~~comprising:

at least one microporous membrane having approximately circular pores of approximately constant diameter, wherein the pore diameter lies in the range from .2μm - 1μm, the surface of the microporous membrane is at least partly covered with at least one electroactive polymer essentially placed within the pores of said microporous membrane, so that, when said polymer is in a defined oxidation-reduction state and said valve is in a closed state in an electrolytic salt solution comprising an ion having high steric hindrance, ~~it blocks~~said polymer blocks off said pores of said microporous membrane by incorporating the ion having high steric hindrance; and

an electrical supply intended to allow said valve to switch from the closed state to ~~the open~~an open state, and vice versa, by changing the oxidation-reduction state of the electroactive polymer.

2. (Canceled)

3. (Currently Amended) The valve as claimed in claim 1, ~~characterized in that~~wherein the electrical supply has at least one electrode and at least one counterelectrode.

4. (Currently Amended) The valve as claimed in claim 3, ~~characterized in that~~wherein the electrode is formed by the microporous membrane.

5. (Currently Amended) The valve as claimed in claim 1, ~~characterized in that~~wherein the microporous membrane is made of a nonconductive material.

6. (Currently Amended) The valve as claimed in claim 5, ~~characterized in that~~wherein the nonconductive material is a polymer taken from the group

~~comprising:~~consisting of polycarbonates (PC), polyamides (PA), polyethylene terephthalate (PET), polytetrafluoroethylene (PTFE)~~ or Teflon®~~, and derivatives thereof.

7. (Currently Amended) The valve as claimed in claim 5, ~~characterized in that~~wherein the nonconductive material is a polymer taken from the group ~~comprising:~~consisting of cellulose esters, cellulose nitrates and blends thereof.

8. (Currently Amended) The valve as claimed in claim 5, ~~characterized in that~~wherein the membrane further includes at least one external metal layer.

9. (Currently Amended) The valve as claimed in claim 8, ~~characterized in that~~wherein the membrane further includes at least one intermediate polymeric layer to which the external metal layer is fastened.

10. (Currently Amended) The valve as claimed in claim 1, ~~characterized in that~~wherein the microporous membrane is made of a conductive material.

11. (Currently Amended) The valve as claimed in claim 10, ~~characterized in that~~wherein the conductive material is a metal taken from the group ~~comprising:~~consisting of gold, platinum, and palladium~~ or any other equivalent material~~.

12. (Currently Amended) The valve as claimed in claim 1, ~~characterized in that~~wherein the electroactive polymer is a conjugated polymer taken from the group ~~comprising:~~consisting of polyaniline, polypyrrole, polythiophene, polyparaphenylvinylene, poly(p-pyridylvinylene) and derivatives thereof.

13-14. (Canceled)

15. (Currently Amended) A microfluidic device, ~~characterized in that it includes~~comprising at least one valve as claimed in claim 1, wherein ions having high steric hindrance are incorporated into the polymer when the at least one valve is in the closed position, and ions having high steric hindrance are expelled from the polymer when the at least one valve is in the open position.

16. (Currently Amended) A process for producing a valve as claimed in claim 1, ~~characterized in that it comprises~~comprising the following steps:

a) a microporous membrane is placed in an electrolytic solution containing at least one monomer and an electrolytic salt, wherein the electrolytic salt comprises an ion having high steric hindrance;

b) an electrochemical current is induced in said electrolytic solution;

c) the monomer is fixed on to the microporous membrane, and especially in the pores of said membrane;

d) the radial polymerization of the monomer in the pores of said membrane is carried out in the presence of the ion having high steric hindrance; and

e) the polymerization is stopped by cutting off the electrochemical current when the polymers reach the center of the pores, so that said polymers block the pores of said microporous membrane without overlapping one another by incorporating the ion having high steric hindrance.

17. (Currently Amended) The process as claimed in claim 16, ~~characterized in that it includes~~further comprising a prior step of metalizing the microporous membrane when said membrane is made of a nonconductive material, said metalization step comprising the following substeps:

a') a microporous membrane is placed in a monomer solution;

b') the monomer is fixed onto the microporous membrane;

c') the polymerization of the monomer is carried out over the entire surface of the membrane so as to obtain a polymer layer;

d') the membrane thus obtained is placed in a solution containing at least one metal salt; and

e') the electrodeposition of the metal on the polymer layer is carried out by an oxidation-reduction reaction so that the microporous membrane is covered with a metal film.

18. (Currently Amended) The process as claimed in claim 1, ~~characterized in that~~wherein the monomer is taken from the group ~~comprising:~~consisting of pyrrole, thiophene and derivatives thereof.

19. (Currently Amended) The process as claimed in claim 17, ~~characterized in that~~wherein the metal salt is taken from the group ~~comprising:~~consisting of gold cyanide, and gold chloride ~~or any equivalent compound~~.

20. (Currently Amended) The valve as claimed in claim 1, wherein the microporous membrane ~~having~~has a thickness lying within a range of from about 25μm to about 30μm, and ~~wherein~~ an elapsed time during which said valve switches from the closed state to the open state lies in a range of about 1 to 100 milliseconds.

21. (New) The valve as claimed in claim 1, wherein the electrolytic salt is lithium para-naphthalenesulfonate or lithium paratoluenesulfonate and the ion having high steric hindrance is an anion.

22. (New) The process as claimed in claim 16, wherein the electrolytic salt is lithium para-naphthalenesulfonate or lithium paratoluenesulfonate and the ion having high steric hindrance is an anion.

23. (New) An analysis card comprising at least one valve as claimed in claim 1, wherein the card manages and/or separates species in a fluid by positioning the at least one valve in a closed position where ions having high steric hindrance are incorporated into the polymer of the at least one valve, and switching the at least one valve to an open position in which ions having high steric hindrance are expelled from the polymer.